

Clean Version of the Amended Claims

21. A communication device having a multi-rate speech coder that performs silence description coding of a speech signal having varying characteristics, comprising:

a voice activity detection circuit that is capable of identifying a substantially speech-like characteristic of a segment of the speech signal; and

B1 a processing circuit communicatively coupled to the voice activity detection circuit, the processing circuit being capable of selectively applying one of a plurality of coding modes to the segment of the speech signal,

wherein the plurality of coding modes comprises a plurality of speech coding modes and a silence description coding mode,

wherein the processing circuit selects the silence description coding mode upon the identification of the absence of a substantially speech-like characteristic of the segment of the speech signal independent of the speech coding mode applied immediately before the segment.

26. The communication device of claim 21, wherein the communication device comprises a network communication device.

B2 27. The communication device of claim 26, wherein the network communication device is capable of communicating via a network.

28. The communication device of claim 26, wherein the network communication device is capable of transmitting an encoded speech signal via a network.

29. The communication device of claim 21, wherein the communication device is capable of communicating via a wireless network.

30. The communication device of claim 29, wherein the wireless network includes a communication cell.

B3 32. The communication device of claim 21, wherein the communication device comprises a network interface device that is capable of interfacing a wireless network.

34. A method of coding a speech signal, comprising:
coding a first segment of the speech signal using a speech coding mode selected from a plurality of speech coding modes; and
B4 coding a second segment of the speech signal using a silence description coding mode independent of the speech coding mode used to code the first segment of the speech signal immediately before the second segment.

38. A communication system, comprising:
a coder;
a decoder; and
a communication network selectively interconnecting the coder and the decoder;
B5 wherein the coder comprises a voice activity detector, a processor coupled with the voice activity detector, and a transmitter coupled with the processor,
wherein the voice activity detector receives first and second segments of a speech signal and identifies a substantially speech-like characteristic of the first segment and an absence of a substantially speech-like characteristic of the second segment of the speech signal,
wherein the processor selectively applies one of a plurality of coding modes to the first and second segments, the plurality of coding modes comprises a plurality of speech coding modes and a silence coding mode,
wherein the processor applies the silence description coding mode to the second segment of the speech signal independent of the speech coding mode applied to the first segment of the speech signal immediately before the second segment.

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39. The communication system of claim 38, wherein the decoder generates a reproduced speech signal that is perceptually indistinguishable from the first and second segments of the speech signal.

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42. The communication system of claim 39, wherein the communication network comprises a wireless network.

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44. The communication system of claim 42, wherein the communication network further comprises a wireline communication network connected with the wireless network.

46. A multi-rate codec that encodes a first speech signal having a first plurality of segments and receives a second speech signal having a second plurality of encoded segments, comprising:

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a multi-rate coder, wherein the multi-rate coder is capable of coding each of the segments of the first speech signal via one of a plurality of speech coding modes and a silence description coding mode, wherein the multi-rate coder selects the silence description mode when an absence of a substantially speech-like characteristic is detected in a segment independent of the speech coding mode applied to an immediately earlier segment; and

a multi-rate decoder operatively coupled to the multi-rate coder, wherein the multi-rate decoder is capable of receiving and decoding the second plurality of encoded segments, wherein the multi-rate decoder selectively adds comfort noise to the decoded segment.
